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NOTES ON GEOGRAPHIC DISTRIBUTION

Pisces, Melamphaidae, *Poromitra capito* Goode & Bean, 1883 and *Melamphaes simus* Ebeling, 1962: Distribution extension to the western South Atlantic Ocean.

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The family Melamphaidae includes 36 species in five genera (Nelson 2006) distributed throughout the meso and bathypelagic oceanic zones of the world (Garcia and Morgan 2002). According to Kotlyar (2004) it is the largest and the most diverse family of the stephanoberycoid fishes. This family has three possible pigmentation patterns (Frias-Torres 2006) and different ornaments in the head (spines and ridges), that distinguish the genera (Sandknop and Watson 1996). *Poromitra* has crestlike head ridges and many spines internarially and on the operculum, while *Melamphaes* is recognized by the pigment characters (Sandknop and Watson 1996).

Only seven Melamphaidae species were recorded from the western South Atlantic Ocean (Kotlyar 2004) and among them only adults of *Poromitra crassiceps* (Günther, 1878) were recorded from Brazil (Menezes et al. 2003). Therefore, this study attempted to identify the larval stages of melamphaids occurring along the Brazilian coast (12° S – 23° S).

The specimens included in this study were collected in the oceanic regions of the Brazilian coast, between Bahia and Rio de Janeiro (12° S – 23° S). All stations were located beyond the 1,000 m isobath. Larvae were collected using a bongo net (330- and 500 µm mesh size) that was towed obliquely from the maximum depth of 200 m to the surface; and by vertical hauls from the maximum depth of 1,000 m, using a cylindrical-conical net (500 µm mesh size). Samples were immediately preserved in a borax-buffered solution of 4 % formalin. More information about the study area and sampling methodology are described in Table 1.

Table 1. Study area data, sampling methodology and Melamphaidae larvae standard length (SL).

Species	DZUFRJ	N	SL (mm)	Latitude / Longitude	Date	Local depth (m)	Sampling depth (m)	Net	Mesh size (µm)
P. capito	7512	1	20.8	21°54'36.5" / 39°45'20.0"	Oct/10/2001	1,700	0-1,000	cylindrical-conical	500
M. simus	15355	2	3.3-5.6	22°12'40.0" / 38°40'00.0"	Oct/31/1998	3,200	0-200	bongo	330
M. simus	5499	4	4.9-11.0	22°32'49.0" / 40°04'20.9"	Nov/07/2001	1,054	0-1,000	cylindrical-conical	500
M. simus	5500	1	3.6	22°31'58.9" / 40°02'53.4"	Nov/07/2001	1,066	0-1,000	cylindrical-conical	500
M. simus	5502	8	3.1-4.8	22°32'50.0" / 40°04'09.9"	Nov/06/2001	1,070	0-1,000	cylindrical-conical	500
M. simus	5501	4	3.6-5.4	22°32'50.0" / 40°04'09.9"	Nov/06/2001	1,100	0-1,000	cylindrical-conical	500
M. simus	118	1	3.3	21°14'52.7" / 40°03'10.7"	Feb/28/2002	1,252	0-1,100	cylindrical-conical	500
M. simus	119	2	4.6-7.3	21°14'52.7" / 40°03'10.7"	Feb/28/2002	1,252	0-1,100	cylindrical-conical	500

DZUFRJ, number of voucher species in the larval fish collection; N, number of specimens identified.

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Melamphaid larvae were totally sorted from the samples and measurements (standard length – SL) were made with a micrometer ruler (precision of 0.1 mm). Figures were made from the collected material and all specimens were deposited in the larval fish collection of the Zooplankton and Ichthyoplankton Integrated Laboratory of Federal University of Rio de Janeiro – Brazil (DZUFRJ).

A total of 23 Melamphaidae larvae were identified including two species: *Poromitra capito* Goode & Bean, 1883 and *Melamphaes simus* Ebeling, 1962. This was the first occurrence of these species from the Brazilian coast. According to published reports (Ebeling and Weed 1973; Keene et al. 1987) *Melamphaes simus* had been found previously in Atlantic, Indo-Pacific, and Central North Pacific oceans; in the western North Atlantic, from south of Grand Bank to Bahamas and Gulf of México. The species *Poromitra capito* occurs in North Atlantic Ocean and in the western North Atlantic, from Flemish Cap to the Bahamas. Therefore, in this study both species had their distribution extended to the western South Atlantic Ocean and this new finding contributes to future zoogeographical studies.

In the study area *Poromitra capito* was collected only over the 1,000 m isobath (Table 1). The unique larvae identified is 20.8 mm long (SL) having 3 spines and 11 dorsal fin rays; and 10+22 gillrakers. It also has well developed preopercule, rostral spines, and small eyes in relation to head length (Figure 1).

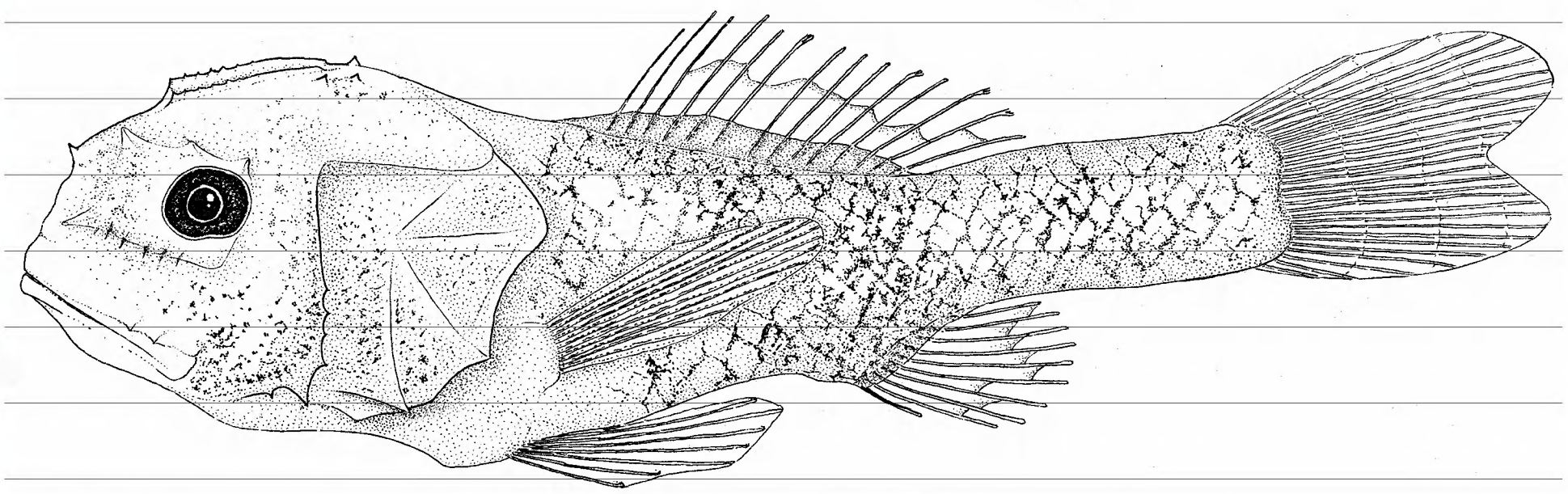

Figure 1. Postflexion larvae of *Poromitra capito* larvae (DZUFRJ 7512).

The genus *Poromitra* was already represented along the northeastern Brazilian coast by the species *Poromitra crassiceps* (Günther, 1878) (McEachran and Fechhelm 1998; Menezes et al. 2003). According Frias-Torres (2006) the differences between these species are the number of gillrakers, pigmentation pattern, and the presence of many spines in the top of the head that are more developed in *P. capito*, while *P. crassiceps* has internarial spines well developed.

Twenty two larvae of *Melamphaes simus* Ebeling, 1962 were identified and all of them were collected between 21° and 22° (Table 1). According to Sandknop and Watson (1996) the pigmentation pattern and the number of gillrakers are the main characteristics that separate the *Melamphaes* species.

In this study *Melamphaes* larvae varied from of 3.1 mm (preflexion) to 11 mm (postflexion) (Table 1). Larvae of this species have 3 spines and 15-16 rays in the dorsal fin and 4+11-12 gillrakers (Figure 2). The pigmentation pattern comprises peritoneal pigment and internal pigment over the brain during flexion stage. In this stage there is also a line of melanophores in the dorsal margin of the body from the beginning of the dorsal fin to the caudal peduncle and a small cluster of spots on caudal peduncle (Figure 2).

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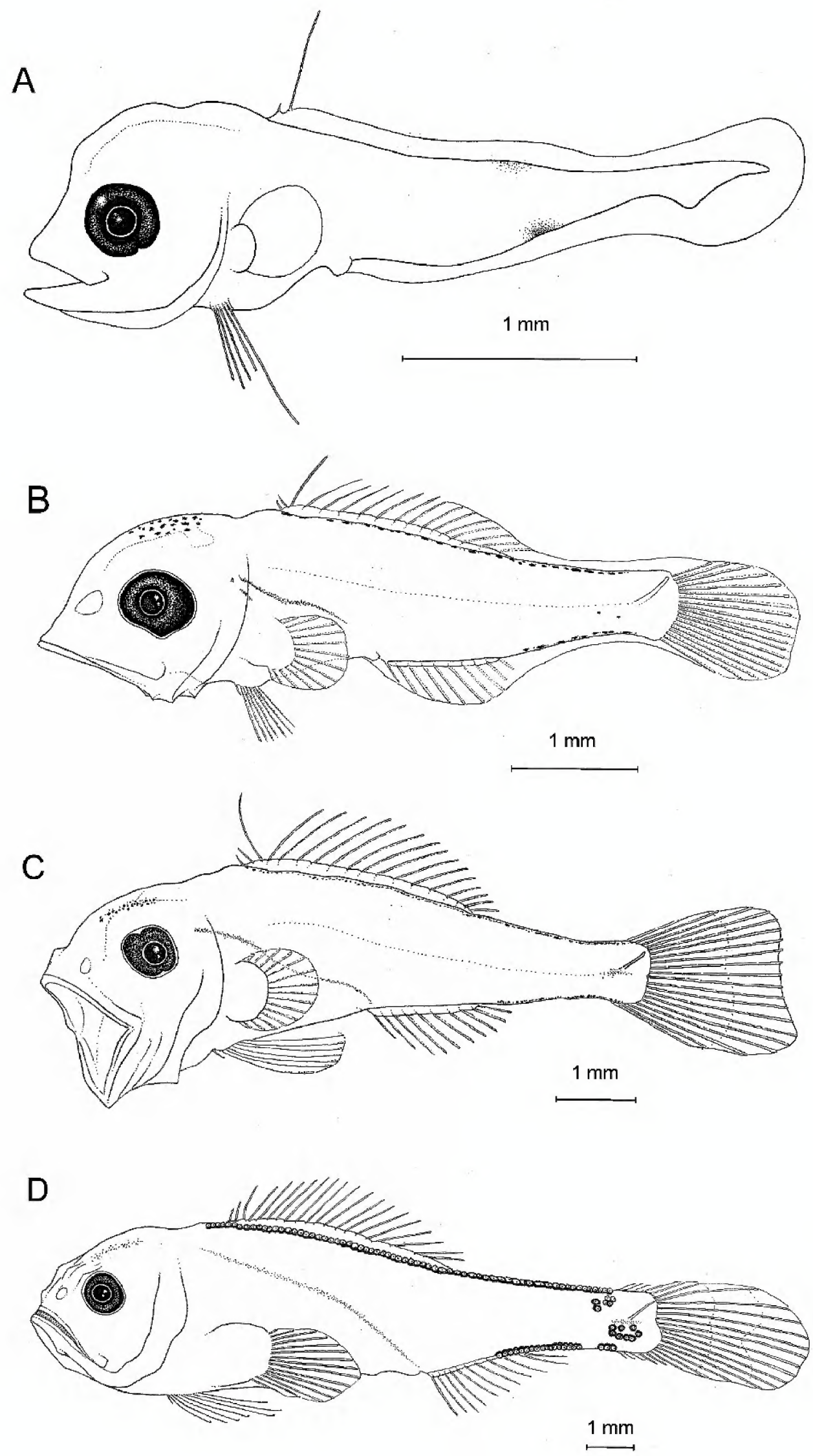

Figure 2. Preflexion larvae of *Melamphaes simus*; A, DZUFRJ 5502, flexion larvae; B and C, DZUFRJ 5499, 119, postflexion larvae; D, DZUFRJ 5499.

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All Melamphaidae larvae identified in this study were collected at stations located beyond the 1,000 m and 3,000 m isobaths (Table 1). According to the literature this family is a typical member of the deep water fish fauna which often occur in waters over the continental slope (Sandknop and Watson 1996; Moore 2002; Frias-Torres 2006; Fahay 2007).

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